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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

JUL 19 1993  
FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of:

Preparation for International  
Telecommunication Union World

ET Docket No. 93-198

## **SUMMARY**

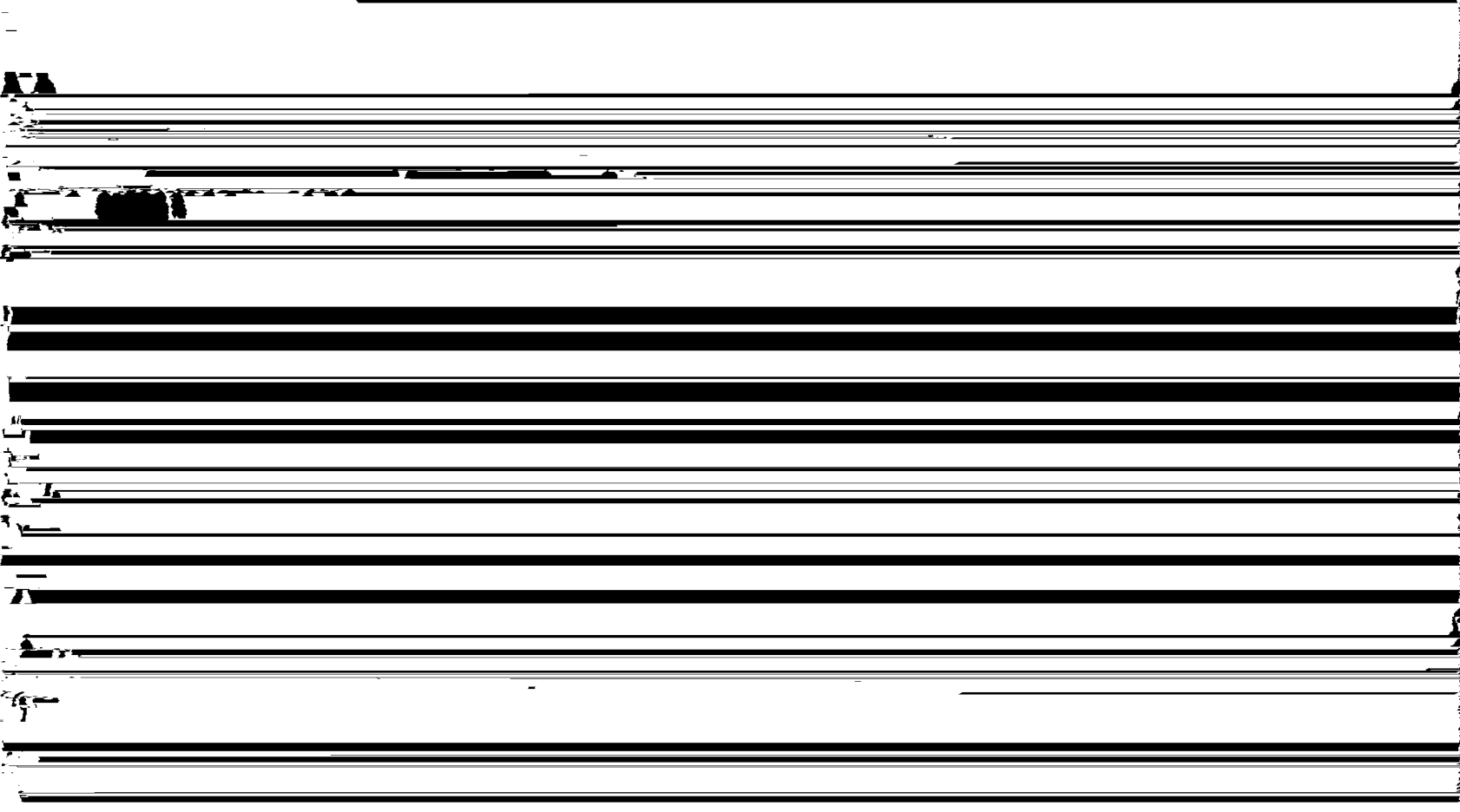
At the 1993 World Radiocommunication Conference later this year, the United States should seek to limit the scope of the agendas for WRC-95 and WRC-97 primarily to facilitating the use of Mobile-Satellite Service ("MSS") allocations in the 1-3 GHz bands. In addition, the U.S. should ensure that the scope of the MSS agenda items are sufficiently broad to include whatever specific MSS proposals are ultimately deemed necessary for consideration at these conferences. WRC-93 should not recommend including on the agenda of the next two WRCs any items that are not sufficiently ripe for consideration, such as many of the non-MSS issues identified in the Notice of Inquiry.

Given the urgent need for more usable MSS spectrum, some of the issues that should be addressed at WRC-95 include advancing the effective dates of certain MSS allocations, converting all MSS spectrum to global allocations, converting all service-specific MSS allocations to generic MSS allocations, and adjusting certain bands allocated to MSS in view of potential limitations on sharing with other co-primary services.

Because many of the necessary technical and operational studies will not have been completed in time for consideration at the 1995 conference, such issues as coordination and sharing between MSS systems and coordination of non-geostationary MSS feeder links with geostationary Fixed-Satellite Service operations should not be addressed until WRC-97 or a later conference. However, given the explosive growth in mobile communications, there may be a need to allocate additional

spectrum to the Mobile Services at WRC-97 or a conference soon thereafter.

Finally, due to time constraints, both in terms of pre-conference review and the pressing need to address critical MSS issues at WRC-95, the Report of the Voluntary Group of Experts should not be addressed in any substantive detail until



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primarily upon the expected global demands for Mobile-Satellite Services ("MSS"), and that the MSS agenda items recommended at WRC-93 for the 1995 and 1997 conferences be broad in scope.

As the Commission is well aware, Motorola has a vital interest in this proceeding. In December 1990, its subsidiary, Motorola Satellite Communications, Inc., filed an application with the Commission for authority to construct a low-Earth orbit ("LEO") satellite system called the IRIDIUM<sup>SM</sup> system.<sup>3/</sup> Using

relating to MSS. Of particular note, were the new worldwide MSS allocations in the 1610-1626.5 MHz and 2483.5-2500 MHz bands.<sup>5/</sup> Spectrum was also allocated to MSS in other bands. However, these bands are shared with other services. Furthermore, restrictions were placed on many of these MSS allocations limiting their geographic scope, the types of transmissions MSS operations can engage in, and the dates that MSS can commence. The net effect of the shared nature of these bands and restrictions placed on their use for MSS is that there still does not appear to be enough spectrum allocated worldwide to MSS to accommodate the expected demand for both LEO and geostationary MSS systems. Accordingly, the upcoming 1995 and 1997 WRCs should devote a substantial amount of their work to facilitating the use of the frequency bands already allocated to MSS.

In light of the limited time expected for conducting each conference, the WRC-93 should not recommend including on the agendas of the next two WRCs any items that are not sufficiently ripe for consideration by a large and diverse group of administrations. In Motorola's view, the agenda for WRC-95, and perhaps even WRC-97, should not address in any substantive detail either the proposed review of the international Radio Regulations or many of the other non-MSS issues identified by the Commission in its Notice of Inquiry. Instead, the agenda for WRC-95 should

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<sup>5/</sup> Included within these bands is a new secondary space-to-Earth MSS allocation in the 1613.8-1626.5 MHz band. The IRIDIUM™ system requires a downlink allocation in this band in order to

be limited primarily to making the bands already allocated to MSS



By leaving the overall MSS agenda broad in scope, the United States as well as other administrations will be able to develop and support whatever specific proposals are ultimately deemed necessary for consideration at these conferences.

Furthermore, the flexibility associated with a broad MSS agenda item will make it possible to accommodate changes in the relative importance of various issues as the WRCs approach.

Under such a broadly written agenda item, some of the issues that should be addressed at WRC-95 include:

- Advancing the effective dates (such as those contained in International Footnote 746B) of

- Coordination of non-geostationary MSS feeder links with geostationary FSS operations (i.e., RR 2613)<sup>U</sup> and
- Additional MSS allocations if necessary.

#### **B. Need for More Flexible MSS Allocations**

There is an urgent need for more usable MSS spectrum, especially for non-geostationary satellite systems that will become operational before the end of this decade. These satellite systems are expected to offer a wide range of new global personal communications services, including voice, data, facsimile, and messaging. More flexible MSS allocations will be needed to meet the expected demand for global personal communications services and other MSS requirements, and to improve spectrum utilization.

In preparation for WARC-92, the Commission recognized the growing demand for MSS and the increased pressures to accommodate both U.S. and foreign MSS systems in the limited

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<sup>U</sup> Motorola does not believe that MSS feeder links should be on the WRC-95 agenda because it is unlikely that the necessary technical studies will have been completed by that time and there has been no experience up to now in applying RR 2613 to real world conditions. However, in light of the work of the MSS Above 1 GHz Negotiated Rulemaking Committee on this issue, it may be desirable to address RR 2613 at a later conference such as WRC-97.

spectrum available for these services.<sup>9/</sup> As the Commission correctly observed:

The characteristics used with MSS systems -- essentially omnidirectional earth stations with limited discrimination capabilities between satellites -- will constrain the number of systems that can operate simultaneously on the same frequencies. Each system will have less spectrum to use as more systems are accommodated in the future.

The Commission's Industry Advisory Committee, as well as a CCIR Joint Interim Working Party (8/15), have also determined that there will be a need for significantly more MSS spectrum worldwide in order to satisfy communications requirements from aeronautical, maritime, land mobile and hand portable platforms. Their estimates ranged from a "minimum" of 44.8 MHz of additional MSS spectrum in each direction up to a "likely" amount of 175.4 MHz of new MSS spectrum in each direction.<sup>9/</sup> Motorola estimates that IRIDIUM™-type systems alone will need up to 90 MHz of usable MSS spectrum by 2013.<sup>10/</sup>

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<sup>9/</sup> See An Inquiry Relating to Preparation for the International Telecommunication Union World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum, Second Notice of Inquiry, 5 FCC Rcd. 6046, 6055 (1990).

<sup>10/</sup> See An Inquiry Relating to Preparation for the

While the WARC-92 MSS spectrum allocations were encouraging to those entities interested in operating global mobile satellite systems, there are numerous restrictions and limitations placed on many of these allocations which, unless changed at future WRCs, may inhibit their timely use by such systems. Thus, Motorola fully supports the position of the United States to strive for more flexible, worldwide, generic MSS allocations to meet future demand for this spectrum. Continued pursuit of this objective should be a top priority of the United States at the next WRC. Only through the establishment of uniform MSS allocations in all three ITU regions can the world receive the benefits of truly global personal satellite communications.<sup>11/</sup>

For example, consideration must be given to moving up and establishing a common implementation date in all three ITU regions for the 1970-2010 MHz and 2160-2200 MHz bands, and to add appropriate MSS allocations in ITU Regions 1 and 3 for the lower 10 MHz of each of those bands.<sup>12/</sup> Similarly, consideration should be given to converting the ITU Region 2 MSS

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<sup>10/</sup> (...continued)

If this assumption turns out to be incorrect, then additional MSS allocations must be found to meet the expected demand. Total MSS spectrum requirements will exceed these estimates since they do not take into account the spectrum needs of non IRIDIUM™-type MSS systems.

<sup>11/</sup> Truly global personal communications might also be facilitated by adopting some common worldwide mobile allocations for terrestrial roaming services adjacent to or compatible with MSS allocations.

<sup>12/</sup> See ITU footnote 746B.

allocations in the 1675-1710 MHz and 1492-1525 MHz bands to global allocations by adding primary MSS designations in the other two regions of the world.<sup>13/</sup>

Such decisions concerning the existing MSS allocations cannot be postponed beyond 1997 because of the long lead times required to plan for and construct global MSS satellite systems. In this regard, Motorola will need to begin constructing its second generation satellites by 1999 in order to meet the expected demand for IRIDIUM™ system services.

**C. Need to Adjust Bands Allocated to MSS in View of Potential Sharing Limitations**

As the Commission is well aware, much of the spectrum that has already been allocated for MSS has also been allocated to other co-primary services which will restrict its usefulness by future MSS systems. For example, it appears that in the near term only a limited amount of the 1610-1626.5 MHz and 2483.5-2500 MHz bands will be available for use by MSS systems due to interference to or from existing users in those bands.<sup>14/</sup> Likewise, the need to share with existing terrestrial systems in

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<sup>13/</sup> Motorola has previously established that certain MSS systems could share portions of 1675-1710 MHz band with existing users. See Petition for Expedited Action, File Nos. 9-DSS-P-91(87), et. al (filed June 9, 1992).

<sup>14/</sup> Report of the MSS Above 1 GHz Negotiated Rulemaking Committee at § 3.3, Annex 2 at §§ 3, 4.9, Addendum 3 (CC Docket No. 92-166).

These 500 bonds may severely restrict the availability of much of

**MSS-related Resolutions identified in Appendix II of the Notice of Inquiry:**

- **Resolutions that should be on the Agenda for WRC-95:**
  - (1) Res. 113 (ALOC-92) Adjustments to the Fixed Service as a Consequence of Changes in the Frequency Allocations within the Range 1-3 GHz. This resolution should be placed on the agenda for WRC-95 because, as noted above, it is expected that the report of Radiocommunication Task Group 12/4 (Frequency sharing criteria within the range 1-3 GHz) will be completed by the middle of next year and because the timely implementation of second generation MSS systems requires prompt resolution of issues pertaining to the availability of spectrum for MSS.
  - (2) Res. 213 (ALOC-92) Sharing Studies Concerning the Use of the Bands 1492-1525 MHz and 1675-1710 MHz in Region 2 by the Mobile-Satellite Service: invites CCIR to study sharing at 1.5 and 1.7 GHz in Region 2 of allocated services and mobile satellite service. This item should be on the agenda for WRC-95 because the relevant reports of Study Group 7 (Science Services) are expected

to be completed in time for consideration at the 1995 Conference and because worldwide MSS spectrum requirements are sufficiently large that timely consideration of all candidate bands is essential.<sup>16/</sup>

- Resolutions that should be on the Agenda for WRC-97 or later:

- (1) Res. 46 (ALOC-92) Interim Procedures for the Coordination and Notification of Frequency Assignments of Non-Geostationary-Satellite Networks in Certain Space Services and the Other Services to Which the Bands are Allocated: resolves that a future WARC address the need for permanent procedures.

Resolution 46 states in relevant part that "there is a need for interim procedures to be applied until such time as a future conference, with the benefit of further studies by the CCIR and taking account of the experience gained in practice, is able to adopt a permanent procedure." Given this guidance, Resolution 46 should not be on a WRC agenda until 1997, at the earliest,

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<sup>16/</sup> It may also be appropriate to consider at WRC-95 one resolution from a conference prior to WARC-92. Specifically, timely implementation of spectrum for MSS may help further the purposes of Resolution 16, adopted at WARC-79, which relates to the role of telecommunications in integrated rural development.



because it is unlikely that the relevant  
Radiocommunication Study Group (formerly  
CCIR) report will be completed in time for

- Resolutions that need not be considered at a WRC:

(1) Res. 60 (WARC-79) Information on the  
Propagation of Radio Waves in the  
Determination of the Coordination Area.

Motorola notes that the work of

Radiocommunication Task Group 12/3

States and other administrations. The scope of this report, as the Commission recognizes, will be considerable, including such major tasks as the simplification of the international Table of Frequency Allocations and related Radio Regulations, the simplification of regulatory procedures contained in Articles 11-17, and the simplification of the remainder of the Radio Regulations.<sup>18/</sup> An additional two years will greatly assist all administrations in analyzing the findings and recommendations of the VGE and building a consensus on its report.

Moreover, there is no pressing need to rush to any decisions with respect to the VGE report. The simplification of the Radio Regulations can wait an additional two years without causing serious problems for the United States. The limited amount of time available at WRC-95 would be better spent addressing substantive MSS allocation issues which are far more pressing. Motorola is concerned that if both items remain on the WRC-95 agenda, there simply will not be enough time to resolve the significant issues facing the MSS industry.

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<sup>18/</sup> Motorola recognizes that with respect to VGE, Task 1 (Matters Relating to the Allocation of Frequency Bands), the VGE Report may address some issues that must be considered under the separate MSS agenda item at WRC-95. Nevertheless, Task 1 should not be considered in substance at WRC-95 because it is expected to encompass a much broader range of services than MSS and thus would consume too much time. Motorola believes that consideration of converting service-specific MSS allocations to generic MSS allocations falls within the principles guiding the work of the VGE Task 1, i.e., to consider establishing "broadly defined" services and "merging of services." As such, consideration of such issues at WRC-95 should not prejudice later consideration of the VGE Report.

### **III. WIND PROFILER RADARS**

Motorola also believes that wind profiler radars should not be on the agenda for WRC-95. The Commission only recently requested comment on proposed domestic allocations for this service,<sup>19/</sup> and there appears to be serious interference concerns as to some of the frequencies proposed by the Commission for this service.<sup>20/</sup> This agenda item should not be brought to a WRC until the United States' domestic interference and sharing issues are resolved. Thus, the United States should propose that wind profiler radar systems be considered, at the earliest, at WRC-97.

### **IV. BROADCASTING-SATELLITE SERVICE (SOUND)**

Motorola does not understand there to be any significant advantage for the United States to propose that BSS (sound) be placed on the upcoming WRC agendas. In light of the proposed U.S. allocation for BSS (sound) in the 2310-2360 MHz band and the lack of overlap of this allocation with any nearby country, we agree with the Commission that international planning for this service does not appear to be necessary at this time. As indicated above, the interests of the United States would be

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<sup>19/</sup> See Notice of Proposed Rule Making and Notice of Inquiry, ET Docket No. 93-59, 58 FR 19644 (1993).

<sup>20/</sup> See, e.g., Comments of Motorola Inc., ET Docket No. 93-59 (filed June 15, 1993) (Attachment 2 hereto).

better served by devoting most of the upcoming WRC agendas to MSS issues.

**V. HIGH FREQUENCY BROADCASTING PLANNING**

Motorola does not believe that there is an urgent need for addressing any High Frequency ("HF") broadcasting issues at an upcoming WRC. As the Commission notes, the needs of U.S. High Frequency broadcasters have been met satisfactorily through existing Article 17 coordination procedures. Thus, the Commission should refrain from including such issues on either the 1995 or 1997 WRC. To the extent that a future conference is needed to develop planning procedures for the HF broadcast service, it should be convened as a separate conference devoted exclusively to that subject.

**VI. ALLOCATIONS TO THE MOBILE SERVICES**

The Commission invites parties to suggest new issues for inclusion on future WRC agendas in addition to those presented in the Notice of Inquiry. In this connection, Motorola notes that, given the explosive growth in mobile communications, there may be a need to allocate additional spectrum to the Mobile Services at WRC-97 or a conference soon thereafter.

**VII.        OTHER RESOLUTIONS AND RECOMMENDATIONS**

With respect to those Resolutions and Recommendations listed in Appendix II of the Notice of Inquiry which relate specifically to Wind Profiler Radar Systems, Broadcasting-Satellite Service (Sound) and High Frequency Broadcasting Planning, Motorola believes that, for the reasons stated in Sections III, IV and V above, such issues either should not be on the agendas of the 1995 or 1997 conferences or should not be considered until 1997 at the earliest. Motorola believes that WRC-95 and WRC-97 will be hard-pressed to address the MSS issues that should receive priority consideration at those conferences.

**VIII.       CONCLUSION**

For the foregoing reasons, the Commission should attempt to limit the scope of the upcoming WRCs to address primarily MSS issues. The MSS agenda item should be kept relatively broad in order to give the United States the greatest

degree of flexibility in developing specific proposals after  
WRC-93.

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Dated: July 19, 1993

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CERTIFICATE OF SERVICE

I, Philip L. Malet, hereby certify that the foregoing Comments were served by first-class mail, postage prepaid, this 19th day of July, 1993 on the following persons:

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